

REMARKS

Claims 1-82 remain pending in the Application, of which claims 1, 10, 16, 20, 29, 35, 44, 50, 59, 65, and 74 are in independent form. Claims 50-64 have been amended. No new matter has been added. Applicant respectfully requests reconsideration in view of the foregoing amendments and the following remarks.

I. Allowed Claims

Applicant thanks the Examiner for indicating that claims 1-15, 44-49, and 65-82 are allowed in their current form.

II. Claim Objections

The Examiner objected to claims 50-64 because of informalities. Claims 50-64 have been amended in line with the Examiner's suggested rephrasing of the preamble. Applicant respectfully submits that these claims are now in condition for allowance.

III. Claim Rejections under 35 U.S.C. § 112

The Examiner rejected independent claims 16, 20, 29, and 35 under 35 U.S.C. § 112, second paragraph, as being non-enabling. The Examiner rejected claims 17-19, 21-28, 30-34, and 36-43 based on their dependency to the rejected independent claims. Applicant respectfully traverses the rejection.

a. Claim 16 and its dependent claims

Claim 16 is directed to a preamble structure that includes a first training symbol comprising a plurality of data symbols. Each of the plurality of data symbols corresponds to different ones of a plurality of tones. Each of the plurality of data symbols is designated to be transmitted by a corresponding one of a plurality of antennas.

The Examiner rejected claim 16 under 35 U.S.C. § 112, paragraph two, asserting that claim 16 is "considered as a single means since the claim invention does not seem to appear with another recited element of means. Consequently, such claim is held non-enabling. See MPEP 216.08(a)."¹ Applicant respectfully disagrees.

The term "single means claim" refers to a means-plus-function claim with only a single means limitation, i.e., a standalone means limitation that recites merely one means and a

¹ Applicant presumes that the Examiner intended to cite MPEP 2164.08(a), which is directed to and entitled "Single Means Claims." Applicant will respond according to this presumption.

statement of function. As set out in MPEP 2164,08(a), a single means claim is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph.² This is because a single means claim attempts to covers every structure for achieving the stated result, thereby exceeding the disclosure of the specification. *See, e.g., In re Hyatt*, 708 F.2d 712, 714-715 (Fed. Cir. 1983) (“The long-recognized problem with a single means claim is that it covers every conceivable means for achieving the stated result, while the specification discloses at most only those means known to the inventor.”). A claim avoids the overbreadth problems inherent to the single-means situation if the limitation at issue has “definitive meaning.” *See Genentech, Inc. v. Wellcome Foundation Ltd.*, 29 F.3d 1555, 1570 (Fed. Cir. 1994) (“defining a substance only by its function, encompassing all substances that accomplish that result, is akin to a single means claim. . . [and] avoids that problem only when the [claimed term] has definitive meaning”).

Claim 16 is not a single-means claim. The claim does not exceed the disclosure of Applicant's specification by claiming all possible structures for performing a recited function; rather, claim 16 recites a preamble structure including a training symbol, which training symbol is specifically defined to include multiple data symbols. Each data symbol included in the training symbol is further defined to 1) correspond to different ones of a plurality of tones, and 2) be transmitted by a corresponding one of a plurality of antennas. These qualifying definitions provide the “definitive meaning” necessary to avoid the possibility that the claim, as written, encompasses undisclosed subject matter. Therefore, Applicant respectfully submits that claim 16 is allowable and requests withdrawal of the rejection.

Claims 17-19 were rejected solely by virtue of their dependency on claim 16. Therefore, Applicant respectfully submits that claims 17-19 are allowable for at least the reasons given with respect to claim 16.

b. Claim 20 and its dependent claims

Claim 20 is directed to an apparatus including a training module that transmits a first training symbol on a plurality of antennas. The first training symbol comprises a plurality of data symbols. Each of the plurality of data symbols corresponds to different ones of a plurality

² As specified by MPEP 2164,08(a) and the relevant case law, the proper basis for rejection of a single means claim is under 35 U.S.C. § 112, first paragraph, for undue breadth, not under 35 U.S.C. § 112, second paragraph, for lack of enablement. Applicant will respond accordingly.

of tones. Each of the plurality of antennas transmits a corresponding one of the plurality of data symbols.

As discussed above with respect to claim 16, claim 20 recites qualifying definitions providing the “definitive meaning” necessary to avoid any possibility that the claim, as written, encompasses undisclosed subject matter. Therefore, claim 20 is allowable for at least the reasons given above with respect to claim 16.

Claims 21-28 were rejected solely by virtue of their dependency on claim 20 and are allowable for at least the reasons given with respect to claim 20.

c. Claim 29 and its dependent claims

Claim 29 is directed to an apparatus including a training module that receives a first training symbol transmitted by a plurality of antennas. The first training symbol includes a plurality of data symbols. Each of the plurality of data symbols corresponds to different ones of a plurality of tones. Each of the plurality of data symbols is received from a corresponding one of the plurality of antennas. In response to at least the first training symbol, the training module determines a gain at each of the plurality of antennas for each of the plurality of tones.

As discussed above with respect to claim 16, claim 29 recites qualifying definitions providing the “definitive meaning” necessary to avoid any possibility that the claim, as written, encompasses undisclosed subject matter. Therefore, claim 29 is allowable for at least the reasons given above with respect to claim 16.

Claims 30-34 were rejected solely by virtue of their dependency on claim 29 and are allowable for at least the reasons given with respect to claim 29.

d. Claim 35 and its dependent claims

Claim 35 is directed to an apparatus including means for transmitting a first training symbol on a plurality of antennas. The first training symbol includes a plurality of data symbols. Each of the plurality of data symbols corresponds to different ones of a plurality of tones. Each of the plurality of antennas transmits a corresponding one of the plurality of data symbols.

As discussed above with respect to claim 16, claim 35 recites qualifying definitions providing the “definitive meaning” necessary to avoid any possibility that the claim, as written, encompasses undisclosed subject matter. Therefore, claim 35 is allowable for at least the reasons given above with respect to claim 16.

Applicant : Ravi Narasimhan
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Claims 36-43 were rejected solely by virtue of their dependency on claim 35 and are allowable for at least the reasons given with respect to claim 35.

IV. Conclusion

By responding in the foregoing remarks only to particular positions taken by the Examiner, Applicant does not acquiesce to other positions that have not been explicitly addressed. Additionally, Applicant's arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

A petition for an extension of time under 37 C.F.R. § 1.136 is hereby made.

The fee in the amount of \$120 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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/Christina Jordan/

Christina Jordan
Reg. No. 58,720

Fish & Richardson P.C.
500 Arguello Street, Suite 500
Redwood City, California 94063
Telephone: (650) 839-5070
Facsimile: (877) 769-7945